

APPENDIX EE:

State of Michigan Part 201 and Waste Disposal System Database Information



Matching sites: 11

ID: 07000001
Site Name: MDOT Covington
Site Address: PO Box 167
City: Covington
Zip Code: 49919
County: Baraga
Source: General Government
Pollutant(s): Na; Salt
Score: 17 out of 48
Score Date: 2004-10-06
Township: 48N **Range:** 34W **Section:** 22
Quarter: NE **Quarter/Quarter:** SW
Status: Inactive - no actions taken to address contamination

Site ID: 07000002
Site Name: MDOT L'Anse
Site Address: 301 Winter St.
City: L'Anse
Zip Code: 48904
County: Baraga
Source: General Government
Pollutant(s): Cl; Asphalt; Gasoline
Score: 27 out of 48
Score Date: 2004-10-08
Township: 50N **Range:** 33W **Section:** 09
Quarter: NW **Quarter/Quarter:** NE
Status: Inactive - no actions taken to address contamination

Site ID: 07000004
Site Name: Grade A-1 Stop, L'Anse (213)
Site Address: 118 US-41
City: L'Anse
Zip Code: 49846
County: Baraga
Source: Gasoline Service Station
Pollutant(s): N/A
Score: 38 out of 48
Score Date: 2006-08-02
Township: N/A **Range:** N/A **Section:** N/A
Quarter: N/A **Quarter/Quarter:** N/A
Status: See Leaking Underground Storage Tank Site Database

Site ID: 07000006
Site Name: Holiday Station #168 L'Anse (213)
Site Address: 110 US Highway 41
City: L'Anse
Zip Code: 49946
County: Baraga
Source: Gasoline Service Station
Pollutant(s): N/A
Score: 39 out of 48
Score Date: 2006-07-26
Township: 50N **Range:** 33W **Section:** 9
Quarter: NW **Quarter/Quarter:** NW
Status: See Leaking Underground Storage Tank Site Database

Site ID: 07000007

Site Name: Pettibone Plating Facility

Site Address: 1100 Superior Ave.

City: Baraga

Code: 49908

County: Baraga

Source: Plating & Polishing

Pollutant(s): N/A

Score: 34 out of 48

Score Date: 2004-10-12

Township: 51N **Range:** 33W **Section:** 27

Quarter: NW **Quarter/Quarter:** SW

Status: Interim Response in progress

Site ID: 07000008

Site Name: L'Anse Disposal Village of

Site Address: N/A

City: L'Anse

Zip Code: 49946

County: Baraga

Source: Refuse Systems

Pollutant(s): Leachate

Score: 13 out of 48

Score Date: 1990-09-19

Township: 50N **Range:** 34W **Section:** 12

Quarter: SW **Quarter/Quarter:** NW

Status: Contact Lead Division for current status

Site ID: 07000012

Site Name: Lute's Corner Store L'Anse (213)

Site Address: 801 North Main Street

City: L'Anse

Zip Code: 49846

County: Baraga

Source: Gasoline Service Station

Pollutant(s): N/A

Score: 36 out of 48

Score Date: 2006-11-02

Township: 51N **Range:** 33W **Section:** 36

Quarter: SW **Quarter/Quarter:** SW

Status: See Leaking Underground Storage Tank Site Database

Site ID: 07000024

Site Name: Custom Composites Arnheim

Site Address: B1900N Arnheim Road

City: Baraga

Zip Code: 49908

County: Baraga

Source: Misc Manufacturing Industries

Pollutant(s): Ethylbenzene; Styrene

Score: 31 out of 48

Score Date: 1999-08-16

Township: 52N **Range:** 33W **Section:** 3

Quarter: SE **Quarter/Quarter:** SE

Status: Interim Response in progress

Site ID: 07000025

Site Name: Ken's Service Baraga

Site Address: 821 Superior Avenue

City: Baraga
Zip Code: 49908
County: Baraga
Source: Auto Repair Services & Garage
Pollutant(s): Pb; PCE; Xylenes
Score: 32 out of 48
Score Date: 2004-10-07
Township: 51n **Range:** 33w **Section:** 33
Quarter: NE **Quarter/Quarter:** NE
Status: Interim Response in progress

Site ID: 07000037
Site Name: Former L'Anse Marathon (213)
Site Address: 910-A US-41
City: L'Anse
Zip Code: 49946
County: Baraga
Source: Gasoline Service Station
Pollutant(s): N/A
Score: 36 out of 48
Score Date: 2006-07-25
Township: 50N **Range:** 33W **Section:** 9
Quarter: NW **Quarter/Quarter:** NE
Status: See Leaking Underground Storage Tank Site Database

Site ID: 07000038
Site Name: L'Anse Bulk Plant (213)
Site Address: 13461 Winter St
City: L'Anse
Zip Code: 49946
County: Baraga
Source: Petroleum Bulk Stations & Term
Pollutant(s): N/A
Score: 33 out of 48
Score Date: 2006-11-20
Township: 50N **Range:** 33W **Section:** 9
Quarter: NW **Quarter/Quarter:** NW
Status: See Leaking Underground Storage Tank Site Database

**LETTER REPORT
MDOT BOVINE YARD SITE
BOVINE, BARAGA COUNTY, MICHIGAN**

Prepared for:

**U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 5 Emergency Response Branch
9311 Groh Road
Grosse Ile, MI 48138**

TDD No.:	S05-0107-008
Date Prepared:	November 2, 2001
Contract No.:	68-W-00-129
Prepared by:	Tetra Tech EM Inc.
START Project Manager:	Bradley C. White
Telephone No.:	(312) 946-6464
U.S. EPA On-Scene Coordinator:	Michelle Jaster
Telephone No.:	(734) 692-7683

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1.0 INTRODUCTION

The Tetra Tech EM Inc. Superfund Technical Assessment and Response Team (START) prepared this report in accordance with the requirements of Technical Direction Document (TDD) No. S05-0107-008 issued by the U.S. Environmental Protection Agency (U.S. EPA). The scope of this TDD was to perform a site reconnaissance and conduct sampling activities at the Michigan Department of Transportation (MDOT) Bovine Yard (Bovine) site in Bovine, Baraga County, Michigan. START was tasked to prepare a health and safety plan; document on-site conditions through written logbook notes and photographs; and conduct soil and groundwater sampling activities. Field activities were conducted by START member Brad White. This report discusses the site background, field activities, and analytical results and provides a summary of field and sampling activities and results. The photographic log is included in the Appendix A and validated analytical results are included in Appendix B.



2.0 SITE BACKGROUND

This section provides a description of the Bovine site location and history.

2.1 SITE LOCATION

The Bovine site is located in Bovine, Baraga County, Michigan. The coordinates for the site are 46°43'11" North and 88°25'44" West (see Figure 1). The site measures approximately 250 by 150 feet and is enclosed with a chain-link fence (see Figure 2). The site is bordered to the north by Wisconsin Central railroad tracks and Denomie Creek, to the west by U.S. Highway 4F, to the south by a private residence, and to the east by Keweenaw Bay Indian Community (KBIC) Reservation property. The area surrounding the site contains low-density residential and commercial properties, including a golf course to the southwest. Denomie Creek is a tributary to the Falls River, which flows approximately 4 miles north to Keweenaw Bay.

2.2 SITE HISTORY

MDOT owns the Bovine site and has historically used the property as a storage and maintenance yard. Michigan Department of Environmental Quality (MDEQ) investigated the Bovine site in August 1999 in response to complaints filed with Michigan Department of Natural Resources (MDNR) regarding waste disposal practices at the facility. The complaints alleged the following substances had been dumped at the site: tar, fuel oil, hydraulic oil, lead-based paint, and two types of solvent. The complaints also alleged that MDOT paint trucks were cleaned at the site and that the subsequent paint and solvent wastes were not contained. MDEQ inspected the site and excavated several trenches. No samples were collected as part of MDEQ's 1999 inspection. In 2001, KBIC requested U.S. EPA assistance regarding possible surface and subsurface contamination at the Bovine site, and the potential for off-site migration of contaminants onto adjacent KBIC property.



3.0 FIELD ACTIVITIES

On July 31, 2001, U.S. EPA and START mobilized to the Bovine site to perform an initial site reconnaissance, geophysical investigation, and soil and groundwater sampling. Other parties present during the field activities include representatives from MDOT, MDEQ, and KBIC. This section describes START and U.S. EPA field activities at the Bovine site.

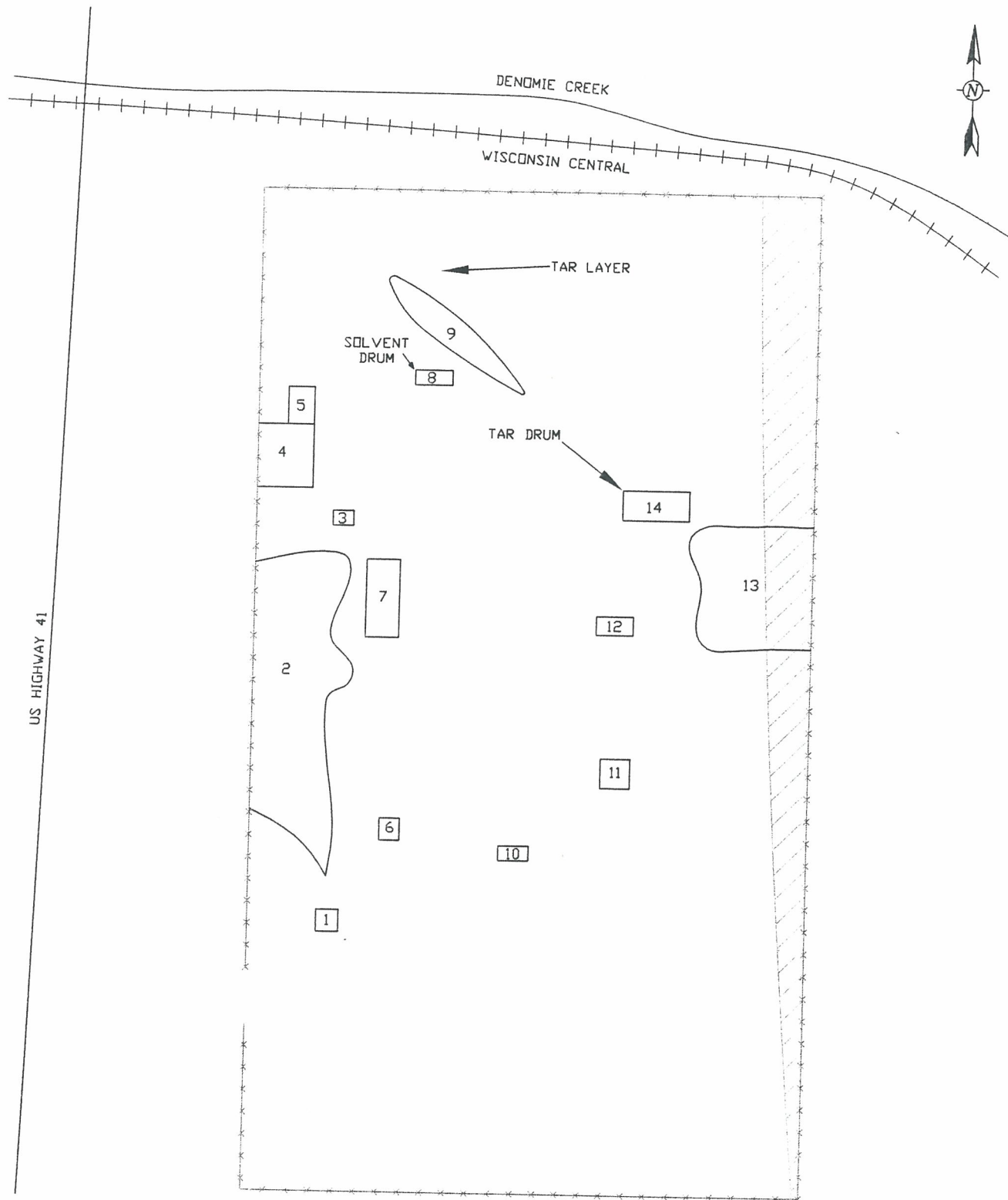
3.1 SITE RECONNAISSANCE

During the site reconnaissance, START initially documented site conditions both within and surrounding the site (see photographic log in Appendix A). The site, which is surrounded by chain-link fence, was currently being used by MDOT to store snowplow blades, two small boats, railroad ties, fence posts and a gravel stockpile. Most of the site property was vacant and covered with sparse vegetation. The eastern edge of the site contained a dirt embankment along the fence that was covered in vegetation. The area surrounding the site was heavily vegetated, including a small wooded area to the east. START observed no obvious areas of stained soil or impacted vegetation on either the site itself or in the immediate area surrounding the site.

3.2 GEOPHYSICAL INVESTIGATION

U.S. EPA performed a geophysical survey of the site using a metal detector, magnetometer, and ground-penetrating radar (GPR) unit. The entire site, aside from the extreme eastern edge with the dirt embankment, was swept with the metal detector to search for buried objects, including buried drums. The eastern edge was not swept because it was inaccessible due to the dirt embankment. The metal detector had a subsurface penetration of 10 to 12 feet, the magnetometer had a subsurface penetration of 4 to 6 feet, and the GPR unit had a subsurface penetration of approximately 4 to 6 feet and provided a general image of the source of the anomaly. Once an anomaly was identified, it was outlined for later test pit excavation. A total of 14 subsurface anomalies were identified, all of which were located north of the entrance gate into the site (see Figure 2).





LEGEND

- 1 SUBSURFACE ANOMALY
- WATER
- ++ RAILROAD
- FENCE
- - - DIRT BERM

0 25 50
SCALE IN FEET

MDOT BOVINE YARD
BOVINE, BARAGA COUNTY, MICHIGAN

FIGURE 2
SITE LAYOUT MAP

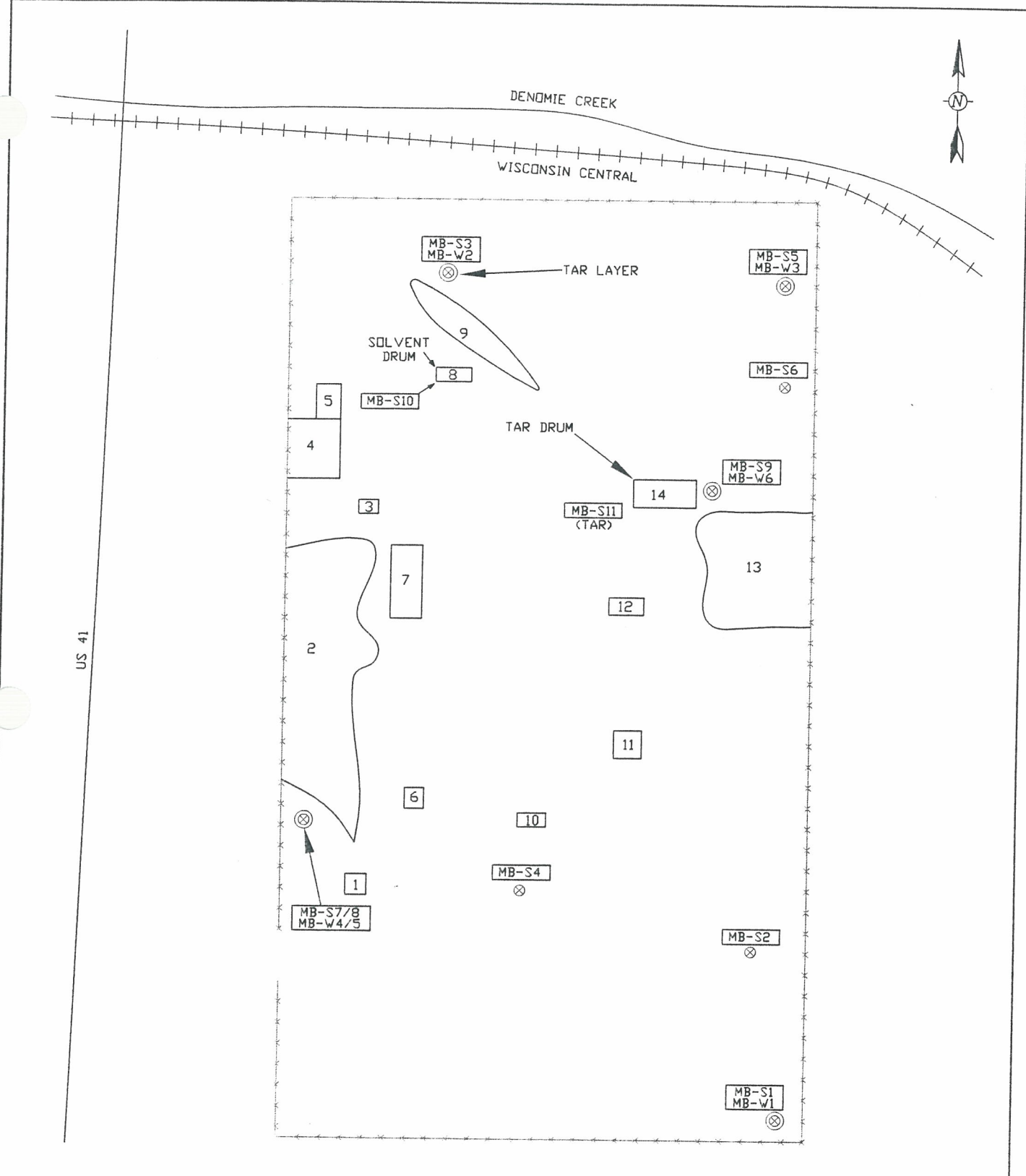
 Tetra Tech Engineering

Subsurface anomalies were then further investigated using an MDOT backhoe to excavate the area. Each of the 14 areas was slowly excavated to reveal the source of the anomaly. Items found during the investigation include metal guardrails, metal culvert material, road signs, 55-gallon drum lids, and fence posts. These items were staged on site. Two 55-gallon drums and their contents were also recovered. A deteriorating drum containing a tar-like substance was recovered from Area 14 (see Figure 2). The second drum was recovered from Area 8 (see Figure 2) and was also in poor condition, with multiple holes visible. As the second drum was removed, a strong solvent odor was apparent. START recorded photoionization detector (PID) readings near one of the openings of over 2,000 parts per million (ppm); however, sustained PID readings in the breathing zone of the excavation area were below the action level specified in the health and safety plan for modifying personal protective equipment. A small volume of clear liquid spilled out of the second drum during the excavation, and the impacted soil was sampled (see Section 3.3). Both drums were then staged by MDOT in a lined vessel pending eventual disposal.

3.3 SAMPLING ACTIVITIES

The objective of U.S. EPA and START sampling activities was not to fully characterize the Bovine site, but to identify potential site-related threats to human health and the environment. In order to accomplish this, a multimedia sampling approach was employed using a Geoprobe™ for collecting subsurface soil and groundwater samples. U.S. EPA and MDOT provided Geoprobe™ samplers for the sampling event, and START monitored the event and collected all samples.

A total of eight soil borings were completed using the Geoprobe™ (see Figure 3). Soil boring locations were spaced randomly throughout the site as requested by the U.S. EPA On-Scene Coordinator (OSC). Once the geophysical work was completed, additional locations were chosen based on their proximity to the recovered drums (see Figure 3). The depth of each soil boring was determined based on either the depth to the saturated zone or to Geoprobe™ auger refusal. Subsurface soil and water samples were then collected as discussed below.



LEGEND

MB-S1	SOIL SAMPLE NO.		WATER
MB-W1	GROUNDWATER SAMPLE NO.		RAILROAD
	SUBSURFACE ANOMALY		
	SOIL BORING LOCATION		
	GROUNDWATER SAMPLING LOCATION		
	FENCE		

0 25 50
SCALE IN FEET

MDOT BOVINE YARD
BOVINE, BARAGA COUNTY, MICHIGAN

FIGURE 3
SAMPLING LOCATION MAP

Tetra Tech EMI Inc

Soil Sampling

After all of the 4-foot-long soil core acetate sleeves were pulled from the Geoprobe™, START opened each core and obtained PID readings in an attempt to determine the best interval for sample collection. None of the soil cores yielded PID readings above background levels; therefore, samples were collected from a 1-foot interval based on selection of a visually distinct soil horizon. For example, the soil core from boring location MB-S3 contained a 2- to 6-inch-thick layer of tar at approximately 3.5 feet below ground surface (bgs). Therefore, the MB-S3 sample was collected from this interval. A total of nine soil samples were collected, including one duplicate sample (see Figure 3). START also collected one surface soil sample at the Bovine site of soil impacted from the liquid in the drum recovered from Area 8 for laboratory analysis (see Figure 3). In addition, a sample of the tar-like product contained in the drum recovered from Area 14 (MB-S11) was also collected for laboratory analysis. The samples were collected in 16-ounce glass jars for laboratory analysis (see Section 4.0).

Groundwater Sampling

Groundwater sampling locations were collocated with the soil boring locations. Samples were collected using a peristaltic pump from approximately 1 to 2 feet below the surface of the water table. The samples were placed in 1-liter plastic jars, 1-liter amber glass jars, and 40-milliliter glass vials for various laboratory analyses. A total of six groundwater samples, including one duplicate sample, were collected (see Figure 3). Because of complications with the Geoprobe™, groundwater samples could not be collected from three soil boring locations. Section 4.0 summarizes the analytical results.

4.0 ANALYTICAL RESULTS

Soil and groundwater samples collected by START were shipped to EIS Analytical Services in Indianapolis, Indiana, for laboratory analysis. All soil and groundwater samples were analyzed for total Resource Conservation and Recovery Act (RCRA) metals, volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and total petroleum hydrocarbons (TPH). All soil samples were also analyzed for percent moisture. In addition, soil samples associated with the recovered drums, MB-S10 and MB-S11, were analyzed for flashpoint. Table 1 summarizes the soil sample analytical results, and Table 2 summarizes the groundwater sample analytical results. Validated analytical results are provided in Appendix B.



TABLE 2

SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS
MDOT BOVINE YARD SITE
BOVINE, BARAGA COUNTY, MICHIGAN

Analytical Parameter	Sample No.					
	MB-W1	MB-W2	MB-W3	MB-W4*	MB-W5*	MB-W6
Inorganics* (mg/L)						
Arsenic	<.1	<.1	<.1	<.1	<.1	<.1
Barium	0.87	0.99	0.37	0.41	0.29	0.2
Cadmium	<0.02	0.02	<0.02	<0.02	<0.02	<0.02
Chromium (total)	0.32	0.44	0.26	0.05	<0.02	0.04
Copper	0.41	0.66	0.26	0.04	0.01	0.08
Lead	0.13	0.18	0.05	<0.05	<0.05	<0.05
Mercury	<0.0001	0.00072	0.00012	<0.0001	<0.0001	<0.0001
Nickel	0.28	0.3	0.19	<0.04	<0.04	<0.04
Selenium	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.68	0.74	0.43	0.16	0.03	0.06

Notes:

mg/L =

Milligram per liter

SVOC =

Semivolatile organic compound

TPH =

Total petroleum hydrocarbons

VOC =

Volatile organic compound

* MB-W5 is a duplicate of MB-W4.

b Although a complete laboratory analysis of VOCs, SVOCs, inorganics, and TPH was performed, only analytes with at least one detection are shown in Table 2. Refer to Appendix B for the complete validated analytical results.



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TABLE 1 (Continued)

SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
MDOT BOVINE YARD SITE
BOVINE, BARAGA COUNTY, MICHIGAN

Analytical Parameter	Sample No.										
	MB-S1	MB-S2	MB-S3	MB-S4	MB-S5	MB-S6	MB-S7	MB-S8 ^a	MB-S9	MB-S10	MB-S11 ^b
TPH (mg/kg) ^c											
TPH (DRO)	NA	NA	1,000	NA	NA	NA	NA	NA	NA	NA	17,800
Other											
Percent Moisture (%)	8.4	13	6.5	17	10	9.4	17	18	14	15	NA
Flashpoint (degrees F)	NA	NA	NA	NA	NA	NA	NA	NA	NA	>201	>201

Notes:

DRO = Diesel-range organics
 mg/kg = Milligram per kilogram
 NA = Not analyzed
 ND = Analyte not detected above detection limit
 SVOC = Semivolatile organic compound
 TPH = Total petroleum hydrocarbons
 VOC = Volatile organic compound

^a MB-S8 is a duplicate of sample MB-S7.^b Sample of drum contents.^c Although a complete laboratory analysis of VOCs, SVOCs, inorganics, and DROs was performed, only compounds with at least one detection are shown in Table 1. Refer to Appendix B for the complete validated analytical results.

Tetra Tech EM Inc.

TABLE 1

SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
MDOT BOVINE YARD SITE
BOVINE, BARAGA COUNTY, MICHIGAN

Analytical Parameter	Sample No.										
	MB-S1	MB-S2	MB-S3	MB-S4	MB-S5	MB-S6	MB-S7	MB-S8*	MB-S9	MB-S10	MB-S11*
VOCs (mg/kg) ^o											
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.24	ND
Isopropyltoluene (para)	ND	ND	ND	0.28	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	ND
Xylenes (ortho)	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15	ND
Xylenes (meta + para)	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.68	ND
SVOCs (mg/kg) ^o											
Di-n-butylphthalate	0.76	2.2	ND	ND	ND	ND	ND	1.2	5.9	3	ND
Inorganics (mg/kg) ^o											
Arsenic	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA
Barium	21.4	37.1	14.5	61	26.1	11	40.6	41.3	20.3	22.3	NA
Cadmium	1.1	1.1	1.1	1.1	<1	<1	<1	1.1	<1	1.1	NA
Chromium (total)	15.8	19	26	18.6	13.6	16.5	18.1	18.1	10.9	17.7	NA
Copper	14.4	12.7	290	28	34.7	250	68.5	41.2	10.3	66.1	NA
Lead	<5	<5	10.1	10.8	8.6	<5	22.1	25.2	<5	28.2	NA
Mercury	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	NA
Nickel	10.8	8.1	18.1	11	9.3	12.4	9.1	9.3	7.3	12.4	NA
Selenium	<10	<10	<10	12.3	<10	<10	<10	<10	<10	<10	NA
Silver	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
Zinc	27.5	33.4	34.6	25.7	27.9	26.1	59.5	59.6	19.6	48.8	NA

SITE DESCRIPTION/EXECUTIVE SUMMARY

Site Name and Location

Pettibone Plating Facility
Main Street
Baraga, Michigan 49908

County: Baraga

DNR District: Marquette

Site ID#: 070007

Site Score: 08 (screened)

Date Scored: 10-03-89

Background Information and Site History

This facility manufactures and services hydraulic cylinders and has operated at this location for approximately 30 years. The manufacturing process involves chrome plating. Parts are dipped in a bath of chromic acid, removed and sprayed with rinsewater. The spraying occurs over a metal tank placed in an opening in floor of the building. The tank is set in an oversized pit (sump) lined with concrete block. The water table at the site is very near the surface causing groundwater to infiltrate the sump where it mixes with overspray from the chrome rinsing operation. The liquids that collect in the sump are pumped up and out of the building to an aboveground, open-topped evaporating tank.

Over the 4th of July, 1989 holiday, the pump was left unmanned and a large quantity of liquid (groundwater mixed with chrome process residues) was pumped to the evaporator tank, causing an overflow. Chrome plating process waters spilled to ground surface and spread over a sizeable area. This spill was not reported to regulatory authorities until MDNR personnel noted an extensive area of dead vegetation during a routine RCRA inspection on August 24, 1989. At that time the company agreed to discontinue its chrome plating operations until the system was redesigned and replaced however; another overflow spill occurred in mid-November of 1989 when the sump-pump was inadvertently turned on. In late November of 1989, the company had samples collected to determine the extent and magnitude of soil contamination.

A "Soil Remediation Work Plan" was submitted to the MDNR in September of 1990. This report summarizes investigatory actions (soil assessment) but lacks certain essential data. The investigation has not identified the limits of contamination and the proposed response action cannot be supported as a final remedy. Additional investigation is necessary to define the full nature and extent of the environmental problems this site.

The MDNR has requested the corporation which owns this facility to undertake additional work to enable a sound remedial action plan to be developed. This notice also requested that interim response activities be undertaken to protect public health, safety and welfare and the environment. The corporation has been requested to provide a written commitment perform these activities in accordance with a specified schedule. The written commitment is due by April 15, 1991.

03/26/91

NATURAL RESOURCES COMMISSION
MARLENE J. FLUHRARY
GORDON E. GUYER
JOHN A. MATTHEWSON
WART MYERS
JUDY POURPORE

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

DAVID F. HALES, Director
Regional Headquarters
1990 U.S. 41 South
Marquette, Michigan 49855

March 25, 1990

CERTIFIED MAIL
RETURN RECEIPT REQUEST

Mr. Christopher Yunken, President
Pettibone Michigan Corporation
P.O. Box 368
Baraga, Michigan 49908

SUBJECT: EVAPORATOR TANK OVERFLOW ASSESSMENT, TANGEN PLANT

Dear Mr. Yunken:

The report you submitted assessing of the evaporator tank overflow ("Soil Remediation Work Plan for Pettibone Michigan Division Tangen Plant, Baraga, Michigan") has been reviewed. The report is unsatisfactory both in terms of completeness and conclusions. Specific omissions, unsupported conclusions and other concerns are detailed as follows:

OMISSIONS

The report states that "All collected data, observations, and evaluations are presented in this final report" (pg. 7). A large amount of essential information, however, is absent from the report:

Soil Boring Logs

The report indicates that fourteen (14) soil borings were performed and that all borings were advanced to bedrock which was encountered at depths ranging from nine to ten feet. No soil boring logs or other geologic information is presented nor is there a discussion of any field observations of the borings.

Several geologic questions must be answered: What does the glacial overburden at the site consist of and how is it organized? Is there sand, gravel, and/or clay present? What particle sizes were encountered and how were they sorted? Is the overburden homogeneous in terms of composition and particle size or were various strata or facies encountered? Were saturated soils encountered and if so at what depth(s)? Was the bedrock formation or rock type (sandstone, limestone, shale, etc.) identified?

The collection of such geologic information is basic to any subsurface environmental assessment. The above geologic questions must be addressed. The soil boring logs completed by the project geologist and/or the driller must also be presented. It is preferred that copies of field notes taken by project personnel be included to support the data submitted.

P 376 896 227

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Christopher Yunken, Pres	
Pettibone Michigan Corp.	
Street and No. P.O. Box 368	
P.O. State and ZIP Code Baraga, MI 49908	
Postage	\$
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	1.00
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

PS Form 3800, June 1985



March 25, 1990

OMISSIONS (continued)

Soil sampling

Page 7 of the report states that "samples were collected in clean eight ounce jars and were recorded on field boring log sheets". Page 9 states that "Chain-of-custody records were kept." The referenced field boring log sheets and chain-of-custody records have not been included in the report. Records relating to sample collection (at a minimum; sample description, location, date and time of collection) and sample handling/transportation need to be presented.

Page 9 of the report references a background chromium level of 9.4 mg/kg. Evidently this value is the result of analyzing the "background composite" sample referenced in the chart on page 11. This chart indicates the composite was collected from a depth of 0.5' - 1.5'. Where, when and how was the background sample collected? What type of material (geologic description) was collected? Was the analyzed background sample composited in the field or elsewhere and how was it composited?

The workplan for the project, as approved by this Department, stated (pg. 11, last paragraph) that "Field duplicates will be taken to check information concerning sample precision" and "Field duplicates will be collected at a frequency of 5% of all samples." Were field duplicates collected as stated? Were field blanks (such as a sample of the decon rinse water) taken?

Analytic Information

Chromium concentrations for various soil samples are presented in a tabular format on pages 11 and 12 of the report. It is assumed, although not specified, that the reported values represent the total chromium concentration of each sample. Unfortunately this data is of very limited use without copies of the laboratory analytical reports from which the information was derived. Does this table represent all of the total chromium analyses which were performed? Was U.S. EPA Method 3050 used exclusively for the samples presented in Table 1? What were the detection limits the testing laboratory was able to achieve? When were the samples analyzed? A complete copy of analytic information generated by the testing laboratory must to be provided.

No information on duplicate sample analysis is presented in the report. The workplan for this project indicated that duplicate samples would be taken to check "the closeness of repeated sample values" which would "give an indication of the reliability of the sampling plan". Were duplicate samples analyzed and if so what were the results? Were field blanks analyzed?

November 17, 1989, Evaporator Tank Overflow

The report references the July 4, 1989, overflow from the evaporator tank but does not mention another overflow incident known to have occurred. On November 17, 1989, this Department received a call from an employee at the Tangen plant who reported that the evaporator tank had again filled

March 25, 1990

OMISSIONS (continued)

November 17, 1989, Evaporator Tank Overflow (continued)

and overflowed. The caller explained that the sump pump had been inadvertently turned on while attempting to power some other equipment. The pump filled the evaporator tank which began overflowing to the ground surface before the incident was noticed and the pump shut off. This incident, and any other known spill(s), should be referenced in the report.

UNSUPPORTED CONCLUSIONS

Extent of soil contamination

The report seems to suggest that the extent of the contaminated soil has been determined. The results, however, clearly indicate that highly contaminated soil exists at the boundaries of the study area. Three of the most heavily contaminated soil samples (from borings; B-14, B-5, and B-9) are located at the periphery of the study area. Samples from all remaining borings demonstrated chromium concentrations in excess of background levels. How far beyond the study area do chromium contaminated soils extend? The limits of soil contamination must be defined.

The Executive Summary of the report states that "Physical evidence at the site indicates that the released material travelled no further than approximately 60 feet downgradient from the evaporator tank." This statement is very misrepresentative of conditions at the site. During my August 31, 1989 inspection of the spill area, "burnt" vegetation was observed surrounding the evaporator tank and continuing downslope toward a small metal drainage culvert under the loading dock driveway. The area of burnt vegetation was at least 2' wide at the point where the drainage culvert began. During the inspection it was obvious that flow from the spill had been channeled through the culvert to the other side of the driveway. Surface drainage from that point is confined by a runnel leading to the swale at the back of the property. I am not aware of any "physical evidence at the site that indicates the released material travelled no further than" 60 feet. The statement in the Executive Summary should be removed or changed to read: Visual evidence at the site indicates that the material released during the July 4, 1989 spill travelled at least 60 feet downslope of the evaporator tank.

Affected Resources

Page 17 of the report states "The only known environmental media affected by the evaporator tank overflow is soil." Is this to suggest that no other environmental media is contaminated? Page 5 of the workplan you submitted to this Department stated that an objective of the project was to "evaluate potential groundwater or surface water impact as a result of the overflow." In contrast, there is no mention of groundwater or surface water anywhere in final report.

March 25, 1990

UNSUPPORTED CONCLUSIONS (continued)

Affected resources (continued)

In my letter to you of September 19, 1989, it was stated that "The physiographic setting indicates that ground water and/or surface water may have been affected by the spill." It was also stated that "The environmental impact of the spill must be assessed" and that "the assessment should, at a minimum, "... determine if ground water or surface water has been affected." It was pointed out that if groundwater was able to enter the plating sump, then it was plausible that plating waste waters had also leaked out and that this possibility must be investigated.

It is obvious, from what is known about the groundwater entering the sump in the building and the ponded water at the east end of the property, that a high water table exists at this site. It is difficult to believe that none of the 14 borings which were completed to bedrock (at depths ranging from nine to ten feet) penetrated the water table. Elevated chromium concentrations are reported for soils taken as far as 10' below the surface. Are these soil within the saturated zone? Has groundwater been contaminated? Groundwater quality must be assessed to determine the presence and extent of any impact.

Waste characterization

On March 26, 1990, the U.S. Environmental Protection Agency promulgated final rules on a new testing procedure to replace the Extraction Procedure Toxicity (EP-Tox) test in determining if a waste exhibits the characteristics of a hazardous waste. The new testing procedure, called the Toxicity Characteristic Leachate Procedure (TCLP), became effective on September 25, 1990. The TCLP is generally more aggressive than the EP-Tox in leaching out metals from various waste media. The net result of this change in Federal regulations is that some wastes which were previously considered non-hazardous may now be classified as characteristic hazardous wastes under TCLP requirements.

As the report explains, contaminated soil at this site was tested with the EP-Tox procedure. The purpose of this testing was to determine if the waste would be classified as hazardous under the Federal Resource Conservation and Recovery Act (RCRA) and the State Hazardous Waste Management Act. Because the EP-Tox procedure is no longer valid in establishing waste characteristics under RCRA, and because total chromium concentrations in the contaminated soil exceed the RCRA regulatory threshold by as much as 500 times; the contaminated soil will have to be retested using the TCLP before transport or disposal may occur.

OTHER CONCERNS

Contaminant Migration Pathways

The workplan for this project stated (pg. 5) that an additional objective was to "evaluate the potential for off-site migration of impact". The final report, however, gives no indication that potential migration pathways were examined or even considered. There is no evidence to suggest that the contaminants released to the environment are confined or

March 25, 1990

OTHER CONCERNS (continued)

Contaminant Migration Pathways (continued)

controlled. The "potential for off-site migration of impact" cannot be properly evaluated without knowing the extent of the contamination and the environmental media which have been effected.

Since groundwater is likely to have been (or become) effected by the evaporator tank spills, it would be prudent to determine the hydrogeologic characteristics of the aquifer. Does a single aquifer exist or are multiple aquifers present. What is the flow rate and direction of the aquifer(s)? Is a plume of contaminated groundwater emanating from the site and if so what are the contaminant concentrations within the plume and how far does it extend? Answers to these questions are fundamental to determining the potential for environmental contaminants to migrate off-site.

There is also no evidence to indicate that potential surface water impacts have been examined. It is known that the surficial soils at the downslope limits of the study area are severely contaminated (soil boring B-14 exhibited near surface chromium concentrations of 1500 mg/kg). As previously stated there is no evidence to indicate that the flow of the spill(s) was halted at this point or that subsequent runoff did not cause nearsurface contaminants to be washed into the swale at the east end of the property. These potential that surface water has, or may become, contaminated must be investigated.

Potential Direct Contact Hazards

The information provided in the report indicates that the highly contaminated surface soils are present at the site. These contaminated soils represent a potential health threat to individuals who may come into contact with this material. Access to the contaminated soils must be immediately controlled.

The proposal to remove the top two feet of soil from within the study area would help to protect against potential human exposure to the contaminated soils in that area. However, until such a surface removal is undertaken, temporary access controls need to be put in place. At a minimum, the area of highly contaminated soils should be posted with warning signs and cordoned off. It is recommended that security fencing be installed for this purpose.

Proposal to Removal Surface Soils

The proposal to remove the top two feet of soil from within the study area and install an impermeable cover at that depth is considered to be a useful interim response. As previously mentioned, these actions would provide protection against potential human exposure to the contaminated soils in that area. These actions, however, would not constitute adequate safeguards for natural resource targets as suggested on page 17 of the report. Until the nature and extent of the environmental problem is fully defined (for each resources potentially effected or at risk) there is no basis to consider the proposed surface removal as a final remedy.

March 25, 1990

OTHER CONCERNS (continued)

Evaporator Tank Remediation

Page 18 of the report indicates that the liquid remaining in the evaporator tank was found to be corrosive and E.P. Toxic for chromium. The report states that "In accordance with RCRA Subtitle C and Michigan Act 64 hazardous waste criteria, the waste is considered a characteristic hazardous waste". Both RCRA and Act 64 place strict limits on the length of time hazardous wastes may be stored at a generating facility. The report does not indicate when the waste in the evaporating tank was determined to be hazardous. When was this determination made and what has since happened to the hazardous waste?

It is imperative that the known and suspected environmental problems at the Tangen facility be resolved. Toward this end, the Department requests that:

1. Pettibone Michigan Corporation supply all information and data collected during the evaporator tank overflow assessment which has not been presented to this office. This information and data includes, but is not limited to; soil boring logs, sample collection logs, chain-of-custody logs, project field notes and complete laboratory analytical reports. A narrative and/or diagrammatic response to each of the questions raised in the OMISSIONS portion of this letter should be included with this submittal. The described information/data must be delivered to this office no later than **April 15, 1991**.
2. Pettibone Michigan Corporation undertake Interim Response activities to protect public health, safety and welfare and the environment. These activities include, but are not limited to, establishing adequate safeguards to prevent unauthorized access to contaminated media and isolating contaminated soils from precipitation and runoff. These activities should commence immediately and be completed no later than **May 1, 1991**.
3. Pettibone Michigan Corporation complete a comprehensive Remedial Investigation of this site, in accordance with Rule 511 of the Administrative Rules for 1982 P.A. 307, as amended (Michigan Environmental Response Act). A copy of these rules are enclosed. The Department requests that a comprehensive workplan for the Remedial Investigation be submitted to this office for review no later than **May 1, 1991**. This workplan must include a schedule for the initiation and completion of all investigatory activities to be undertaken.

The Department may request additional actions in accordance with the Act 307 Administrative Rules before the selection of a Final Remedy.

The Department requests a written commitment from the Pettibone Michigan Corporation to perform the activities described in this letter within the specified timeframes. This written commitment must be received in this office no later than **April 15, 1991**.

Christopher Yunken
Pettibone Michigan Corp.

-7-

March 25, 1990

Please do not hesitate to contact me should you have any questions regarding this matter.

Sincerely,

Steve Harrington

Steve Harrington
ENVIRONMENTAL RESPONSE DIVISION
906-228-6561

Enclosure (Administrative Rules
1982 PA 307, as amended)

xc: Mr. Dave Dennis, MDNR

MN FILE COPY

CONESTOGA-ROVERS & ASSOCIATES
1801 Old Highway 8, Suite 114
St. Paul, Minnesota 55112
(612) 639-0913 Fax: (612) 639-0923

December 18, 1996

Reference No. 6300

Ms. Amy Keranen
MICHIGAN DEPARTMENT
OF ENVIRONMENTAL QUALITY
427 US 41 North
Baraga, Michigan 49908

Dear Ms. Keranen:

Re: Soil Sampling Results for the Green Chain Area
Connor Forest Industries, Baraga, Michigan

On behalf of Connor Forest Industries (CFI), Conestoga-Rovers & Associates (CRA) is submitting this letter which provides a summary of the soil sampling and analytical results for the green chain investigation at the Baraga mill (Site).

Background

The investigation of the soils beneath the green chain was initiated in 1992 when three surface samples (SB7A, SB7B and SB7C) were collected and analyzed as part of a comprehensive Site assessment. In 1993, additional sampling and analysis was conducted at MW4. These locations are shown on Figure 1. To better define the area of impacted soils in the former green chain, additional sampling and analyses have been conducted during the summer and fall of 1996.

CRA provided an original work plan to MDEQ by letter dated August 7, 1996, for the sampling of soils at 10 locations in the area of the green chain at the Site. In a follow-up letter dated August 16, 1996 to MDEQ from CFI, an additional 4 sampling locations were proposed. This sampling was performed on August 21 and 22, 1996. The samples were collected to the depth of the water table (approximately seven to eight feet bgs), consistent with the August 7 work plan.

A supplemental letter dated September 12, 1996, was submitted to MDEQ providing additional proposed sampling locations. These additional samples were collected from 9 locations on September 13, 1996. These samples were collected using a manually driven split-spoon sampler and were only completed to a depth of approximately four feet below ground surface (bgs).

To complete the definition of PCP impacted soil and, in addition, provide data in an area below the concrete floor of the green chain extension, a third round of soil sampling was proposed in a letter to the MDEQ dated October 16, 1996. These samples were collected from 25 locations

December 18, 1996

Reference No. 6300

- 2 -

on October 30 and October 31, 1996. These soil samples were collected from the surface to the depth of the water table.

In all, soil samples were collected from 48 locations from the surface to a minimum of 4 feet bgs and typically to the water table, which is approximately 6 to 8 feet bgs. Figure 1 shows the locations of the 48 soil borings.

Sampling Procedures

With the exception of SB15 through SB23, the soil borings were drilled using 4 1/4-inch hollow stem augers. Soil samples were collected continuously from the surface to the water table using 2-foot long split-spoon samplers. Samples were inspected visually and described according to the Unified Soil Classification System. Representative portions of each sample were placed in a laboratory supplied sample jar which were placed in a cooler with ice. All samples were shipped to Trace Labs under standard chain-of-custody via overnight courier. The samples from SB15 through SB23 were collected from the surface to 4 feet bgs using 2-foot long split-spoon samplers which were manually driven to the required depth. The soil boring logs are provided in Attachment 1.

Analytical samples were collected from the surface to 0.5 feet bgs, from 0.5 feet to 2.0 feet bgs and then at 2 foot intervals to the completion depths of each soil boring. Trace Labs was instructed to extract and analyze the samples collected from the top 4 feet (3 samples) and to extract and hold the deeper samples for potential future analysis. The exception is SB2, where all of the samples collected (0 feet to 8 feet, 5 samples) were analyzed. The samples were analyzed for PCP using the 8270 method. At those locations where PCP was detected in the 0 to 4 feet samples, the deeper samples were analyzed to delineate the vertical extent of PCP at each boring location. At most locations, subsequent deeper samples were analyzed until two consecutive "not detected" results were attained. Soil boring locations SB17 and SB23 had detectable concentrations in all samples collected to the completion depth of 4 feet bgs. Therefore, soil borings SB36 and SB44 were drilled and sampled immediately adjacent to those two locations to provide additional vertical delineation.

The split-spoon samplers were cleaned prior to collecting each sample by washing with Alconox and rinsing with distilled water. Clean augers were used for each boring location. Augers were cleaned using a high pressure hot water wash. All decontamination fluids were containerized in 55 gallon drums. Drill cuttings were also contained in 55 gallon drums. All drums are staged on-Site pending proper disposal. Each soil boring was backfilled with bentonite chips.

December 18, 1996

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- 3 -

Analytical Results

Figures 2 and 3 provide the locations of the soil borings and summarize the analytical data for PCP concentrations in the soil samples. Table 1 provides a summary of the data showing the soil boring number, sample depth and PCP concentration. The laboratory reports are provided in Attachment 2.

These data show that the area and depth of PCP impacted soils beneath the former green chain building have been delineated. In general, PCP impacted soils were observed within the top three feet of an area which includes the open portion beneath the former conveyor and the southern 10 feet of the wood flooring area, extending from the former dip tank to the east wall of the building.

CFI intends to complete the remediation of these soils utilizing excavation and will be submitting a Remediation Work Plan to MDEQ.

Very Truly Yours,

CONESTOGA-ROVERS & ASSOCIATES



Jon L. Christofferson

JLC/kjs

Enc.

c.c. Clif Clark; MDEQ
Jill Schultz-Stoker; CFI
Lori Poulos; CFI
Ron Lake; CFI
Don Rosenberger; CFI
Margaret Coughlin; Dickinson, Wright
Dustin Ordway; Dickinson, Wright

**CFI - BARAGA GREEN CHAIN
SOIL BORING ANALYTICAL RESULTS**

<i>Location</i>	<i>Depth (ft. bgs)</i>	<i>Concentration (mg/kg)</i>	<i>Location</i>	<i>Depth (ft. bgs)</i>	<i>Concentration (mg/kg)</i>
SB7A ⁽¹⁾	0.0-0.5	70	SB8	0.0-0.5	450
SB7B ⁽¹⁾	0.0-0.5	130	SB8	0.5-1.3	ND
SB7C ⁽¹⁾	0.0-0.5	36	SB8	2.0-3.3	ND
MW4 ⁽²⁾	0.5-1.0	70	SB9	0.0-0.5	140
MW4 ⁽²⁾	9.5-10.0	0.98	SB9	0.5-1.4	ND
MW4 ⁽²⁾	19.5-20.0	ND	SB9	2.0-3.6	ND
SB1	0.0-0.5	250	SB10	0.0-0.5	68
SB1	0.5-1.4	200	SB10	0.5-1.0	500
SB1	2.0-3.6	ND	SB10	2.0-3.5	ND
SB1	4.0-5.4	ND	SB10	4.0-5.8	ND
SB2	0.0-0.5	180	SB11	0.0-0.5	340
SB2	0.5-0.9	92	SB11	0.5-1.5	ND
SB2	2.0-3.7	ND	SB11	2.0-3.8	ND
SB2	4.0-5.8	ND	SB12	0.0-0.5	40
SB2	6.0-7.7	ND	SB12	0.5-1.1	13
SB3	0.0-0.5	ND	SB12	2.0-3.8	ND
SB3	0.5-1.5	ND	SB13	0.0-0.5	200
SB3	2.0-3.8	ND	SB13	0.5-1.2	14
SB4	0.0-0.5	35	SB13	2.0-3.7	ND
SB4	0.5-1.7	75	SB13	4.0-6.0	ND
SB4	2.0-2.8	ND	SB14	0.0-0.5	13
SB4	4.0-6.0	ND	SB14	0.5-1.5	57
SB5	0.0-0.5	44	SB14	2.0-3.7	ND
SB5	0.5-1.2	250	SB14	4.0-4.8	ND
SB5	2.0-3.8	ND	SB15	0.0-0.5	ND
SB5	4.0-5.9	ND	SB15	0.5-2.5	ND
SB6	0.0-0.5	82	SB15	2.5-4.0	ND
SB6	2.0-3.7	ND	SB16	0.0-0.5	ND
SB7	0.0-0.5	18	SB16	0.5-2.0	29
SB7	0.5-1.3	13	SB16	2.0-4.0	ND
SB7	2.0-3.2	8.2	SB17	0.0-0.5	ND
SB7	4.0-5.5	ND	SB17	0.5-2.0	2.3
			SB17	2.0-2.5	15

**CFI - BARAGA GREEN CHAIN
SOIL BORING ANALYTICAL RESULTS**

<i>Location</i>	<i>Depth (ft. bgs)</i>	<i>Concentration (mg/kg)</i>	<i>Location</i>	<i>Depth (ft. bgs)</i>	<i>Concentration (mg/kg)</i>
SB18	0.0-0.5	420	SB29	0.0-0.5	ND
SB18	0.5-2.0	ND	SB29	0.5-0.8	ND
SB18	2.0-3.5	ND	SB29	2.0-3.5	ND
SB19	0.0-0.5	62	SB30	0.0-0.5	ND
SB19	0.5-1.5	ND	SB30	0.5-1.8	ND
SB19	2.0-3.7	ND	SB30	2.0-3.5	ND
SB20	0.0-0.5	ND	SB31	0.0-0.5	ND
SB20	0.5-1.7	22	SB31	0.5-1.2	1.9
SB20	2.0-3.8	ND	SB31	2.0-3.3	ND
SB21	0.0-0.5	ND	SB32	0.0-0.5	ND
SB21	0.5-1.4	ND	SB32	0.5-1.8	ND
SB21	2.0-2.5	ND	SB32	2.0-3.5	ND
SB22	0.0-0.5	1.8	SB33	0.0-0.5	ND
SB22	2.0-3.2	ND	SB33	0.5-2.0	ND
			SB33	2.0-2.9	ND
SB23	0.0-0.5	56	SB34	0.0-0.5	ND
SB23	0.5-1.4	60	SB34	0.5-2.0	ND
SB23	2.0-3.2	81	SB34	2.0-3.5	ND
SB24	0.0-0.5	33	SB35	0.0-0.6	ND
SB24	0.5-1.5	ND	SB35	0.5-1.7	ND
SB24	2.0-3.0	ND	SB35	2.0-2.5	ND
SB25	0.0-0.5	2.5	SB36	0.0-0.5	ND
SB25	0.5-2.0	ND	SB36	0.5-2.0	ND
SB25	2.0-3.1	ND	SB36	2.0-3.7	ND
SB26	0.0-0.5	ND	SB37	0.0-0.5	ND
SB26	0.5-1.4	ND	SB37	0.5-1.3	ND
SB26	2.0-3.0	ND	SB37	2.0-2.7	37
SB27	0.0-0.5	ND	SB37	4.0-4.9	ND
SB27	0.5-1.0	ND	SB38	0.0-0.5	ND
SB27	2.0-2.7	ND	SB38	0.5-1.5	ND
SB28	0.0-0.5	ND	SB38	2.0-3.3	ND
SB28	0.5-1.7	ND			
SB28	2.0-3.6	ND			

CFI - BARAGA GREEN CHAIN
SOIL BORING ANALYTICAL RESULTS

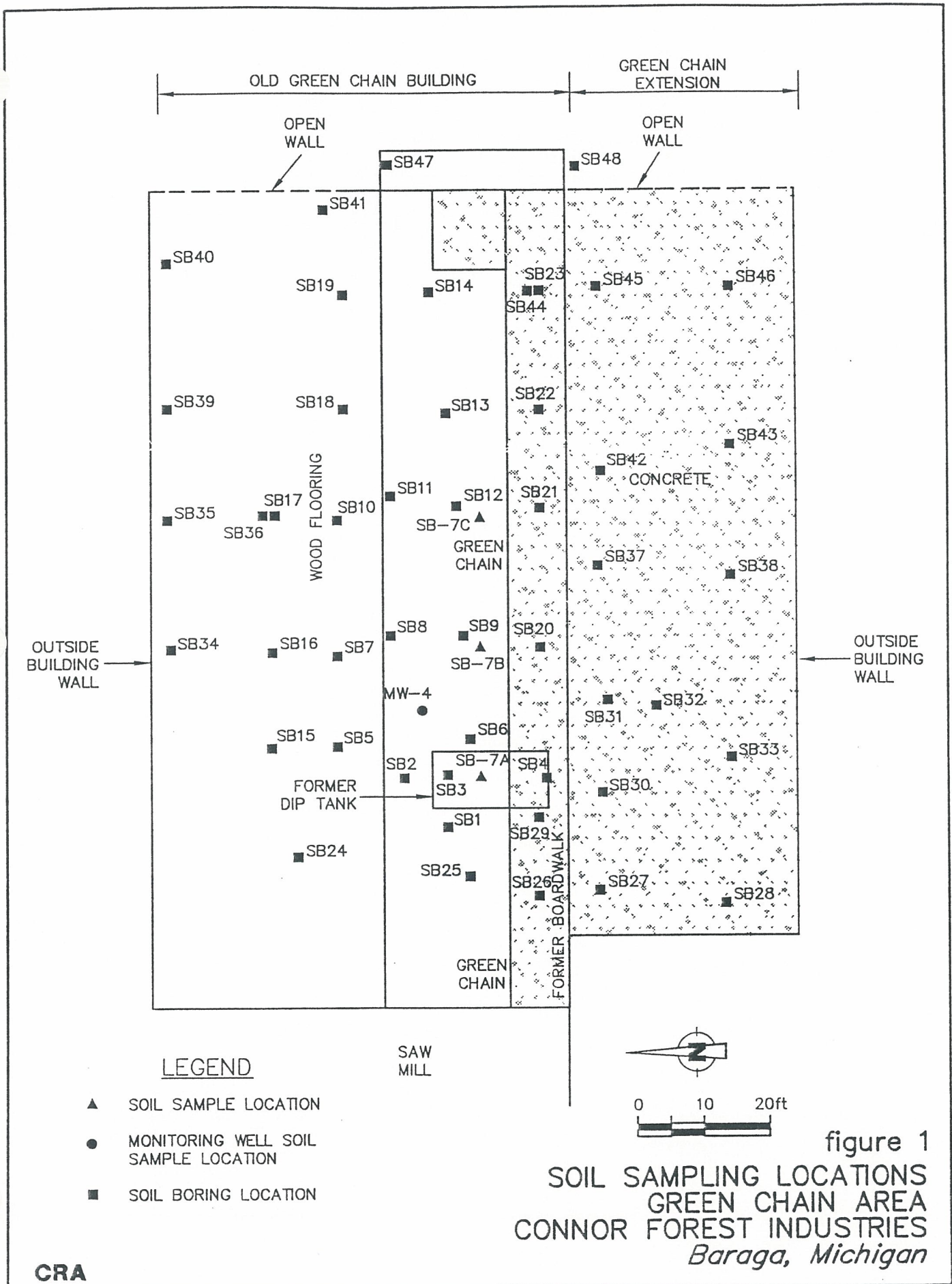
<i>Location</i>	<i>Depth (ft. bgs)</i>	<i>Concentration (mg/kg)</i>	<i>Location</i>	<i>Depth (ft. bgs)</i>	<i>Concentration (mg/kg)</i>
SB39	0.0-0.5	ND	SB45	0.0-0.5	ND
SB39	0.5-1.8	ND	SB45	0.5-1.6	ND
SB39	2.0-3.7	ND	SB45	2.0-2.7	2.1
SB40	0.0-0.5	ND	SB46	0.0-0.5	ND
SB40	0.5-1.7	ND	SB46	0.5-1.6	ND
SB40	2.0-3.6	ND	SB46	2.0-2.4	7.7
SB41	0.0-0.5	7.6	SB46	4.0-5.5	ND
SB41	0.5-1.7	ND	SB46	6.0-6.9	ND
SB41	2.0-3.1	ND	SB47	0.0-0.5	ND
SB42	0.0-0.5	ND	SB47	0.5-2.0	26
SB42	0.5-2.0	ND	SB47	3.0-4.6	ND
SB42	2.0-3.5	2	SB47	5.0-5.9	ND
SB42	4.0-5.3	ND	SB48	0.0-0.5	ND
SB43	0.0-0.5	ND	SB48	0.5-2.0	ND
SB43	0.5-1.8	ND	SB48	2.0-3.5	ND
SB43	2.0-2.5	ND			
SB44	0.0-0.5	64			
SB44	0.5-1.2	190			
SB44	2.0-3.3	350			
SB44	4.0-5.5	ND			
SB44	6.0-6.9	4.9			

Note:

ND - Not detected at quantitation limit of 1.7 mg/kg

⁽¹⁾ Sample collected 10/7/92

⁽²⁾ Sample collected 6/12/93



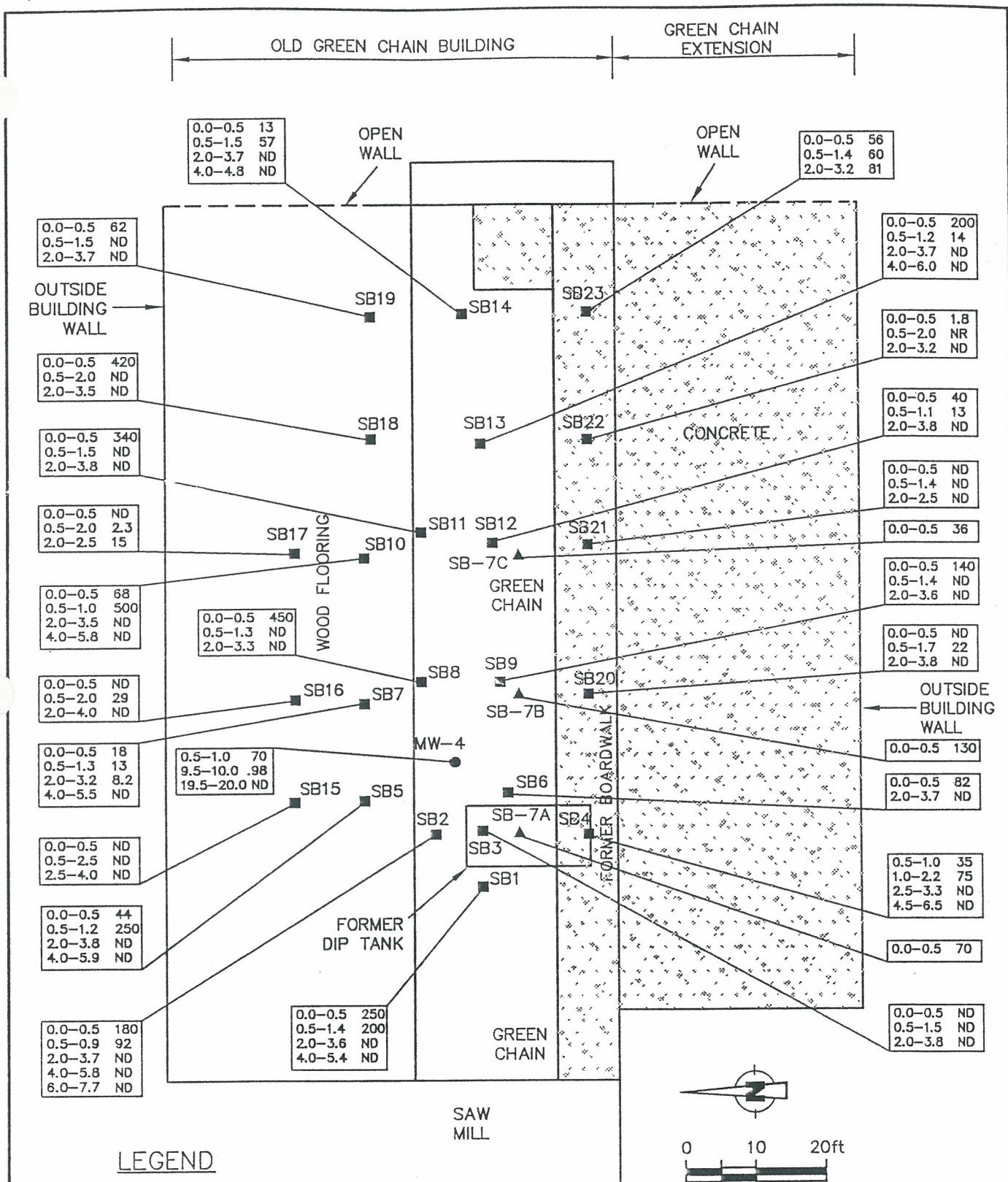
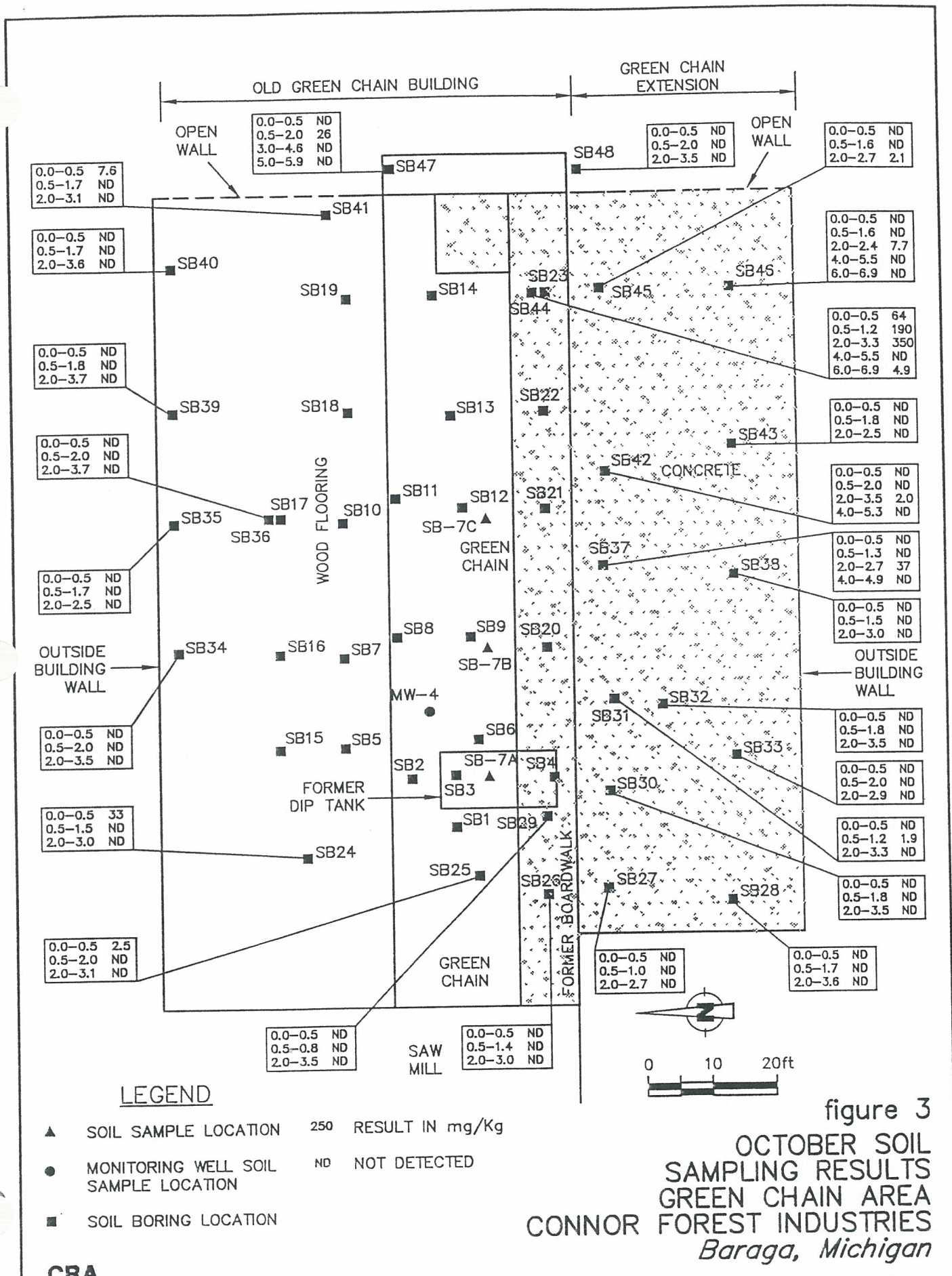


figure 2
AUGUST/SEPTEMBER
SOIL SAMPLING RESULTS
GREEN CHAIN AREA
CONNOR FOREST INDUSTRIES
Baraga, Michigan



STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us

RUSSELL J. HARDING, Director

REPLY TO:

MARQUETTE DISTRICT OFFICE
1990 US HIGHWAY 41 S
MARQUETTE MI 49855

April 30, 1999

CERTIFIED MAIL – Z 159 720 025
RETURN RECEIPT REQUESTED

Mr. Vern A. Miron
Ken's Service
821 Superior Avenue
Baraga, MI 49908

SUBJECT: Request for Response Activities
Ken's Service
821 Superior Street, Baraga, Michigan
Baraga County
MDEQ Site ID No. 070025

Dear Mr. Miron:

This letter is to advise you of conditions that are present at Ken's Service (KS) which are regulated under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA).

On Tuesday October 20, 1998, staff of the Keweenaw Bay Indian Community (KBIC) Environmental Office and the Michigan Department of Environmental Quality (MDEQ) inspected the operations at KS. During the inspection, KBIC and MDEQ staff observed that soils at KS were heavily stained by what appeared to be petroleum products.

On Tuesday, October 27, 1998, the KBIC and MDEQ staff collected four soil samples at KS. One sample was collected from surface soils at each of two stained soil locations and two samples were collected (shallow hand augured soil borings) from an area where sand and gravel fill was recently placed at the location of the former above ground tank farm. The four soil samples were submitted to the MDEQ environmental laboratory for analysis. A copy of the analytic results for these samples and a map depicting where they were collected is enclosed for your reference.

Analyses of the soil samples indicates the presence of the following hazardous substances at concentrations which exceed the applicable Part 201 cleanup criteria:

Soil sample location S-2: xylenes were detected at 100,000 parts per billion (ppb) [Part 201 criteria protective of groundwater is 5600 ppb], 1,3,5-trimethylbenzene at 38,000 ppb [Part 201 criteria protective of groundwater is 25,000 ppb], and 1,2,4-trimethylbenzene at 67,000 ppb [Part 201 criteria protective of groundwater is 34,000 ppb].

Soil sample location S-3: tetrachloroethylene was detected at 120 ppb [Part 201 criteria protective of groundwater is 100 ppb], xylenes at 7700 ppb [Part 201 criteria protective of groundwater is 5600 ppb], and lead at 1150 parts per million (ppm) [Part 201 criteria protective of groundwater is 21 ppm, industrial and commercial I direct contact hazard criteria is 900 ppm, and the commercial I, III and IV and residential direct contact hazard criteria is 400 ppm].

Soil sample location S-4: lead was detected at 221 ppm [Part 201 criteria protective of groundwater is 21 ppm] and cadmium at 7 ppm [Part 201 criteria protective of groundwater is 6.0 ppm].

Numerous other hazardous substances were also detected in the soil samples, at concentrations below the appropriate Part 201 criteria, including toluene, ethylbenzene, isopropylbenzene, n-propylbenzene, naphthalene, 2-methylnaphthalene, chrysene, fluorene, fluoranthene, phenanthrene, pyrene and bis(2-ethylhexyl) phthalate.

The conditions observed at KS indicate that a hazardous substance in concentrations which exceed the residential cleanup requirements of Section 20120a(1)(a) or (17) of the NREPA or the cleanup criteria for unrestricted residential use under Part 213, Leaking Underground Storage Tanks, of the NREPA was released, deposited, or became located at KS. Any area, place or property where hazardous substances exceed this threshold constitutes a "facility" which is regulated under Part 201.

A person who owns or operates a facility has certain obligations under Part 201 as well as under other state and federal law. "Person" is defined as an individual, partnership, corporation, association, governmental entity, or other legal entity.

Records obtained from the Baraga County Register of Deeds (liber 27, page 700) indicate that Vern A. Miron owns the property at this facility. Additional information obtained by the MDEQ indicates that Vern Miron owns KS, which has operated at this facility since 1968.

The MDEQ believes that KS is responsible for an activity causing a release or threat of release of a hazardous substance and therefore is a person liable under Section 20126 of Part 201. Persons liable under Part 201 are responsible for all costs of response activity lawfully incurred by the state relating to the selection and implementation of response activity under Part 201, including, but not limited to, Sections 20107a, 20114, 20118, 20120a, 20120b, 20120c, and 20120d of Part 201 of the NREPA and Part 5 of the Part 201 Administrative Rules, unless an exemption or defense to liability applies.

Pursuant to Section 20114 of the NREPA, an owner or operator of property who has knowledge that the property is a facility, and who is liable under Section 20126 of the NREPA, shall:

1. Immediately stop or prevent the release at its source. Please provide documentation that improper disposal of waste oil on the property has ceased and that all future waste oil will be properly disposed.
2. Determine the nature and extent of the release at the facility.
3. Diligently pursue response activity necessary to achieve cleanup criteria specified under Part 201.

This letter serves as the MDEQ's written request for KS to voluntarily undertake response activity to remedy the environmental contamination at this facility. Pursuant to Section 20114(1)(h) of the NREPA, please take the following actions:

- i. Provide a plan for and undertake interim response activities.
- ii. Provide a plan for and undertake evaluation activities.
- iii. Based upon the results of the evaluation activities, submit to the MDEQ a Remedial Action Plan (RAP) that when implemented will achieve the cleanup criteria specified in Part 201.
- iv. Implement the approved RAP in accordance with the schedule approved by the MDEQ.

In addition, a person who owns/operates a property that he or she has knowledge is a facility, shall perform actions pursuant to Section 7a of the NREPA. These obligations include exercising due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances and allow for the intended use of the facility in a manner that protects the public health and safety.

Please provide your written commitment, a description of actions taken to date, and a schedule of proposed actions regarding response activities at KS to Wayne Morse of the MDEQ (address below) within 30 days of receipt of this letter.

The files used to prepare this notice are located in the MDEQ Marquette District Office. If you wish to review the files or if you have questions regarding this letter, please direct your inquiries to Wayne Morse, MDEQ, Environmental Response Division, Marquette District Office, 1990 U.S. 41 South, Marquette, MI 49855. Mr. Morse's telephone number is 906-228-6568. A copy of Part 201 of the NREPA, as amended, and a copy of the MDEQ Environmental Response Division Operational Memorandum #18 (Part 201 Generic Cleanup Criteria Tables) are enclosed for your convenience.

Sincerely,



Clifton Clark
District Supervisor
Environmental Response Division
906-228-6568

WM/ks

Enclosures

cc: Mr. William Beaver, KBIC
Mr. Daniel Schultz, MDEQ
Ms. Patricia McKay, MDEQ
Mr. Robert Schmeling II, MDEQ
Mr. Wayne Morse, MDEQ